REMARKS

Interview

Applicants thank the Examiner for the courtesy of the telephonic interview held on 5 September 2007. As noted in the interview, Applicants' corresponding European patent issued on 18 July 2007. For the Examiner's convenience, the patent number is 1539986.

Claims

Claims 24 to 35 and 54 to 57 are pending in the case. Claim 24 has been amended. Support for the amendment in claim 24 may be found throughout the specification in general and in Example 19 in particular.

The amendment does not add new matter and entry thereof is respectfully requested.

Rejections Under 35 U.S.C. § 103

Claims 24, 25, 28 to 35, and 54 were rejected under 35 U.S.C. § 103(a) as unpatentable over Bentsen (US 6,566,508) in view of Collins (EP 0044140). Insofar as the rejection might apply to the claims as amended herein, it is respectfully traversed.

Bentsen relates to coumarin based fluorogenic compounds and their use in assays for detecting biological activity. Bentsen is deficient at least because it does not teach use of a partitioning element. The Examiner has acknowledged this deficiency.

Collins relates to a binding assay based on solvent extraction of a labelled compound of interest. The binding assay involves subjecting a reaction mixture, which may contain free or complexed reagent, with a reactant that reacts with either the free or complexed reagent. The reactant, which may be an enzyme, is used simply to change the solubility properties of the free or complexed reagent, so that the resulting reagent can be extracted from the aqueous phase into a hydrophobic solvent phase, where the labelled material is detected. Thus, the assay described in Collins relies on solvent (liquid phase) extraction of a hydrophobic compound of interest.

As amended herein, claim 24 recites a solid partitioning element, which is not taught or suggested by the cited references. It is therefore submitted that claims 24, 25, 28 to 35, and 54 are patentable over Bentsen and Collins. Withdrawal of the rejection and reconsideration are respectfully requested.

As to the rejections of claims 25 and 28, 29, 30, and 32, 31 and 33, and 34 and 35, it is submitted that these rejections no longer apply in view of amended claim 24 and the above comments. Withdrawal of these rejections and reconsideration are respectfully requested.

Claims 26 and 27 were rejected under 35 U.S.C. § 103(a) as unpatentable over Bentsen in view of Collins and further in view of Lee (US 20030222012). This rejection is respectfully traversed.

Claims 26 and 27 include the limitations of claim 24 and add that the vessel comprises a removable cartridge for containing the sample and the substrate, and that the partitioning element is disposed in the removable cartridge. The combination of Bentsen and Collins is deficient with respect to claim 24 as discussed above, and with respect to claims 26 and 27. The further combination of Bentsen and Collins with Lee does not repair this deficiency.

Lee teaches a mesoporous membrane used as a collector or separator for removing particulate matter from air. Separation of particulate matter is based on size of the particulate matter and pore size of the membrane. All particulate matter, which may include analytes and other materials, that is too large to pass through the pores of the membrane is trapped in the membrane. Thus, Lee teaches a filter, and not selective partitioning of an analyte. Insofar as Lee might disclose a removable cartridge, Lee does not repair the deficiency of Bentsen and Collins.

Accordingly, it is submitted that claims 26 and 27 are patentable over Bentsen and Collins in view of Lee. Withdrawal of the rejection and reconsideration are respectfully requested.

Claims 55 to 57 were rejected under 35 U.S.C. § 103(a) as unpatentable over Bentsen in view of Collins and further in view of either Ritts (US 20030228681), Wolfbeis (US 5,238,809), or Loeb (US 7,096,053). This rejection is respectfully traversed.

Claims 55 to 57 include the limitations of claim 24 and add that the partitioning element comprises a polymer film, a hydrophobic polymer, or polydimethylsiloxane (PDMS). The combination of Bentsen and Collins is deficient with respect to claims 24 as discussed above. The further combination of Bentsen and Collins with either Ritts, Wolfbeis, or Loeb does not repair this deficiency. In particular:

Ritts relates to an analyte sensor having a barrier which separates two chambers. The analyte is transported from the first chamber across the barrier to the second chamber where it is detected. See, for example, paragraphs 0004 and 0005. The barrier may be PDMS.

In contrast, current claim 24 recites "a solid partitioning element that allows partitioning of only one of said biological molecule and said at least one substrate **thereinto**" [emphasis added]. Insofar as Ritts teaches that the barrier may be PDMS, Ritts does not teach or suggest a solid partitioning element as recited in claims 24 and 55 to 57, thus the deficiency of Bentsen and Collins is not repaired.

Wolfbeis discloses a method employing an "enzyme permeable membrane" or "protective cap" which defines a reaction chamber containing an optical probe, an enzyme reactant (i.e., substrate) and an enzyme. Wolfbeis specifically teaches, at column 6, lines 48 to 50, that the reaction chamber is permeable to the enzyme and does not permit the enzyme reactant to leave by diffusion. Further, Wolfbeis teaches at column 6, lines 60 to 68, that the enzyme-substrate reaction takes place within the reaction chamber created by the enzyme permeable membrane. This results in all three of the enzyme, the substrate, and the product being present in the reaction chamber.

In contrast, as discussed above, the invention as recited in claims 24 and 55 to 57 provides a partitioning element in which only the analyte is partitioned thereinto. The analyte may be the biological molecule or the at least one substrate. Clearly Wolfbeis does not repair the deficiency of Bentsen and Collins.

Loeb teaches a sensing device having an "analyte-specific biomolecule" immobilized in a polymer matrix of a biosensing material, such that analytes bind to the analyte-specific biomolecule and are detected. See, for example, column 10, lines 6 to 16. As a result, the both the analyte and the analyte-specific biomolecule are present in the biosensing material. (In this respect, Loeb teaches an approach similar to that of Wolfbeis.)

Loeb does not teach or suggest a solid partitioning element into which only the analyte is partitioned, as recited in claims 24 and 55 to 57. Therefore, Loeb does not repair the deficiency of Bentsen and Collins.

In view of the foregoing, it is submitted that the claims 55 to 57 are patentable over the cited combination of references. Withdrawal of the rejection and reconsideration are respectfully requested.

Summary

All rejections have been overcome or rendered moot by this amendment and reply. It is submitted that claims 24 to 35 and 54 to 57 are in condition for allowance, and Applicants respectfully request early action in this regard. Should any outstanding issues remain, the Examiner is invited to telephone Stephen Scribner (Reg. No. 44,452) at 613-533-2342 so that such issues may be resolved as quickly as possible.

Respectfully submitted,
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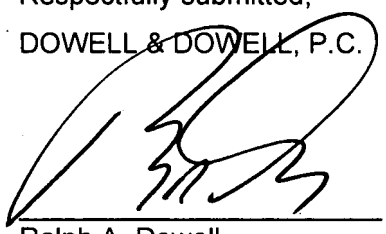

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